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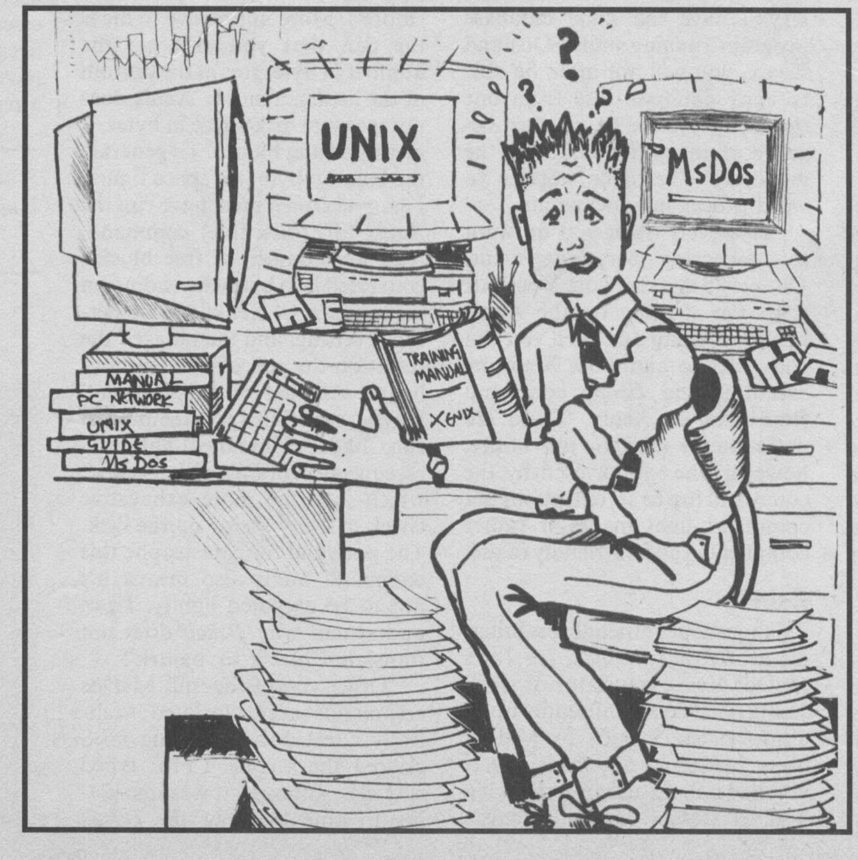
The icing on the cake

Steve Baxter breaks down the incompatibility barriers between Unix and MsDos with Ice Ten from the cool-sounding James River Group

When the day comes when you have to upgrade from your single-user PC to a multi-user system, you have to decide what type of system to go for. The two giants of the multi-user micro world are the PC network and the Unix multi-user system. Deciding between the two is agonising.

For some lucky companies, such as my own, this decision is irrelevant. We need some applications software that is only available under Xenix and some that is only available under MsDos. In short, we need both types of system. Because of this, we are faced with a more fundamental problem – incompatibility between systems and a glut of equipment. Imagine this: to access both systems, each user needs a PC workstation for the network and a dumb terminal for the multi-user system. My desk is hardly big enough for one screen and keyboard – two would be impossible.



Some of you are already screaming 'terminal emulation' at the page. And it's true, terminal emulation on a PC makes it pretend to be a dumb terminal. As such, you can use it on a multi-user system. But the problems with most terminal emulators are threefold. Firstly, they strictly emulate very dumb terminals, ie they strip your PC of all its 'extra' features (such as hard disks) because true terminals do not have them. This means that file transfer is just not an option. Secondly, most emulators are designed for linking to mini and mainframe hosts rather than big micros and the emulations offered are more suited to the former environment. So, you'll find lots of packages offering DEC emulations, but not that many that offer Wyse 50 or 60. Lastly, emulators only emulate – they do nothing extra. To use one effectively, you have to be competent in using the Dos system you are running from and the multi-user system you are running to. Most users do not want to become boffins. MsDos is complicated enough; learning Unix as well is beyond the call of duty.

So what do I want? I want to be able to use my PC as a PC on a multi-user system rather than as a dumb terminal. I want emulations that work with micro products such as *SCO Xenix*, *SCO Unix*, *Tetraplan*, *Informix* and the like. And I want my emulator to work as a translator as well as an emulator, making my multi-user operating system look just like MsDos. Guess what – I've found the product!

It's called *Ice Ten*, from the James River Group (so what if you've never heard of them?). It does everything I've waffled on about for the last few paragraphs, and more. This is your Christmas bargain for 1989! *Ice Ten* has three parts. *DejaVu* is the basic emulation program which lets you log onto Unix or Xenix hosts. It's a naff name, but a good product. *Ucopy* is the file transfer utility for copying between MsDos, Unix, and Xenix. *Dshell* is effectively the Unix translator; it makes MsDos commands run under Unix in the same way as they would run under MsDos.

DejaVu

I find it hard to get excited about a terminal emulator. There are lots of them about and they all do the same thing. But *DejaVu* has three features that make it stand out. Firstly, it is designed for PC systems to link to bigger PC systems and is an acknowledgement that micros really do perform the role minis took a couple of years ago. Instead of the outdated emulation options such as VT52, VT100, and VT220, *DejaVu* gives you various flavours of ANSI emulation (ie it works on an IBM-compatible PC), and of Wyse 60 emulation, as well as the usual VT100 and AT&T options.

If you run ANSI emulation, which you normally would if you're using a modern PC, you have the option of using all 25 lines on the screen. Hands up the people who thought they only had 24 lines on a PC screen! Although one line may seem insignificant to you, it is in fact very useful in programming as a comment or error line. Using the 25th line means you can either fit more data in the main screen window, or simply put more lines between error messages and data. Both are useful functions.

Wyse 60 emulation is the most important facet of *DejaVu*. The Wyse 60 terminal is without doubt the best terminal money can buy. Good screen resolution, good refresh rate, 38000 baud communications, lots of comms protocols, and a local printer port are just some of its best features. However, what really set it apart when it came out was its PC-ATE keyboard layout. The Wyse 60 can actually be supplied with a keyboard on which the keys are in the same place as the keys on your PC. Shock horror! This utterly basic idea hadn't occurred to other terminal manufacturers at the time. By now, they're probably all doing it.

DejaVu is not a normal emulation program. When you load it, it does not automatically start a terminal session on your Unix host. Instead, *DejaVu* is a terminate and stay resident 'TSR' program; in other words, it loads the necessary programs into memory and then returns to the Dos prompt. You can then go on to do whatever MsDos work you like. When you want to change to another system, you 'hotkey' to it. Imagine the following scenario: Your PC's Autoexec.bat loads *DejaVu* into memory. From your opening menu you log onto your in-house Novell network. You want to check some information on your Xenix/Informix database so you press Alt-X. You log into Xenix, get your information, and press Alt-D to return to MsDos. You are returned to Dos at exactly the point you left it. As long as you didn't log out, your Xenix session is still running so you can hotkey back later to make more enquiries. By the way, this is not a theoretical exercise. This is exactly the way I now use *DejaVu* every day.

The selection of hotkeys is up to the user. However, I think it will be difficult to find more logical hotkeys than the defaults of Alt-D for Dos, Alt-X for Xenix, and Alt-U for Unix! The one snag with *DejaVu* is a common TSR problem: they eat memory. *DejaVu* is very compact, only taking 35K of Ram, but even this causes trouble in my situation. If I load *DejaVu*, then log onto the network, and then load my *SmartWare II* word processor I'm OK. If I try to use the thesaurus and spell checker, I run out of Ram. *SmartWare II* may be an unfair example to use because it has memory-handling troubles of its own, but a clever solution for *DejaVu* would be to load above 640K if the Ram is available.

Although it is basically a one-to-one emulation package, ie you link a Dos machine to one Xenix host or one Unix host – not both – multiple copies of the program can be loaded at once (with the associated Ram implications). So, if you set up *DejaVu* for Xenix and called the specification XENIX.DAT, then set it up differently for Unix and saved this as UNIX.DAT, you could amend Autoexec.bat to run DEJAVU XENIX and DEJAVU UNIX. Once loaded, you could flip from Novell to Unix to Xenix from one PC! That's nice.

Ucopy

Clever terminal emulation is *Ice Ten*'s major selling point. However, there are occasions when the data on your PC needs to be transferred to the Xenix host and vice versa. These occasions are limited because (even *Ice Ten* admits) file transfer only works reliably on text files. For instance, if you have the same database program running under Dos and Xenix, you will not often be able to copy database files from one operating system to another because of incompatibilities in the database. The same applies to word processing documents.

However, when you do want to copy across operating systems, *Ucopy* will do it for you. You start a session running on the Xenix host by logging on. Then you can copy files to and from Xenix by executing the *Ucopy* command from Dos or Xenix. There are undoubtedly uses for this utility; however, the syntax used by the command (up to seven options per command line) makes it rather complicated and unfriendly to use.

> **"When using DejaVu to run a Xenix session you can invoke the Dshell command to turn the Xenix display into a typical MsDos one"**

Dshell

Talking about unfriendliness brings me neatly on to *Dshell*, *Ice Ten*'s MsDos Xenix translator or shell. Xenix is called an unfriendly operating system, usually by MsDos users. In fact, it's not unfriendly. If you had a multi-user multitasking MsDos system with all Xenix's facilities, it would have just as many commands as Xenix. Alternatively, if you cut Xenix down to the same cretinous level as MsDos, it would have as few commands. Anyway, sermon aside, when using *DejaVu* to run a Xenix session you can invoke the *Dshell* command to turn the Xenix display into a typical MsDos one. The translation facilities are very comprehensive.

Firstly, you are given a full MsDos PG path prompt, ie 'U:\>'. You type in 'DIR' and *Dshell* converts it to 'l' (Xenix's equivalent – list), then reads the response from the computer (which would be in Xenix's directory listing format) and converts it to an MsDos format. It does the same with 'DIR/W' ('lc') and 'DIR/P' ('l | more'). More impressive to me is the fact that you also get the number of bytes free at the bottom of the listing. You see, Xenix does not measure disk space in bytes, it measures it in blocks. To generate the byte-by-byte free space figure, I assume *Dshell* must have run the Xenix 'df' (disk free) command, read the number of free blocks, converted it to bytes depending on that version of Xenix's bytes-per-block setting, and then tagged the result on the end of the directory listing. All that in a millisecond! Having seen this, I was tempted to run Chkdsk. This failed! The nearest equivalent of Chkdsk is 'badtrk', which is a far more exhaustive check of every sector on the disk. The potential for catastrophe this command holds also means it's not to be executed lightly. I can understand why *Dshell* does not translate Chkdsk to 'badtrk'!

Other run-of-the-mill MsDos commands are translated faultlessly. I tested the following. CLS cleared the screen. TYPE typed text files, although it was interesting to note that but the *Dshell* commands were not case sensitive, the filenames I typed in were – no translation is performed on filenames to check whether the file exists in another variation of case. Also, Xenix files which had filenames longer than eight characters (they can be up to 14 in Xenix) are cut down to seven characters plus a '%' in the *Dshell* DIR listing. But to access the files, you need to use the full Xenix filename, which you can only see by using the Xenix 'l' command! COPY, DEL, and REN worked exactly as expected. MD, CD, and RD produced a perfect directory structure. Also, *Dshell* politely converted MsDos's '\' directory delimiter into Xenix's '/'. No more confusion over what is a forward slash and what is a backslash!

One small gripe is that if you got a command wrong, *Dshell* responds with Xenix error messages. If you try to COPY a file that doesn't exist, you get a 'cp: file.txt not found' message. This message means that *Dshell* executed the Xenix 'cp' (copy) command, but that the command failed. The resulting error message came straight to the user unaltered. I understood what it said, but would other users?

Ice Ten

Why is *Ice Ten* called *Ice Ten*? Because you buy it with a 10-user licence. That's a sensible bit of marketing. This is a product that will usually be used by network users, so multiple copies would be essential. At £250 for the 10-user licence (that's the latest price I have, anyway), it has to be seen as a real bargain.

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